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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,638	09/07/2006	Alphons Antonius Maria Lambertus Bruckers	NL040248	8397
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EXAMINER				
JOHNS, ANDREW W				
ART UNIT		PAPER NUMBER		
2624				
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12/04/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,638

Applicant(s)

BRUEKERS ET AL.

Examiner

Andrew W. Johns

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____
- Paper No(s)/Mail Date: ____

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 2 includes unlabeled boxes/elements where the function(s) or operation(s) are unclear. Appropriate legends would aid in a better understanding of the subject matter illustrated in this figure and are required in accordance with 37 C.F.R. § 1.84(o). Corrected drawing sheets in compliance with 37 C.F.R. § 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 C.F.R. § 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 U.S.C. § 101

2. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 12, 14 and 17 rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

The subject matter variously defined in claims 12, 14 and 17 does not fall in to one of the four categories of statutory subject matter. In particular, claim 12 is directed towards "Transformed data generated using the method" of claim 1, which is not a process, machine, composition of matter or product of manufacture. The "transformed data" of claim 12 is an abstraction that does not constitute a sequence of steps that make up a process, nor is it a physical thing, structure or substance that would constitute a machine, composition of matter or product of manufacture. Similarly, claims 14 and 17 are directed towards "Computer software" *per se*, which also constitutes abstract data. Such software, in and of itself, does not constitute the sequence of operations that make up a process, nor is it a physical thing, structure or substance that would constitute a machine, composition of matter or product of manufacture.

Claim Rejections - 35 U.S.C. § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11 and 16 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for those apparatus implementations that might be known to applicant, does not reasonably provide enablement for every conceivable structure or apparatus for performing the claimed method. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Claims 11 and 16 fail to define any details of the structure of the claimed apparatus, so that they encompass any and every conceivable structure

or apparatus for performing the claimed method. Such claims cannot be enabled by a disclosure that is necessarily limited to those structures known to applicant. See M.P.E.P. § 2164.08(a) and *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983).

6. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 11 and 16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, the recitation of “preferably” at line 4 is confusing and indefinite because it is unclear if the claim is intended to be limited to the specific techniques for combining the signals that follow this recitation or if it is intended to broadly encompass any technique for combining that meets the language that precedes this recitation. Consequently, the exact metes and bounds of this claim cannot be readily determined and the claim fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 16 attempt to define a product (i.e., a machine or apparatus) entirely by virtue of its function, in the absence of any recited structure. Products must distinguish over the prior art in terms of their structure (or structure in combination with the structure’s function when claimed functionally) rather than function alone (see M.P.E.P. § 2114). Therefore, an “apparatus” not having structural limitations fails to “particularly point out and distinctly claim...” the invention in accordance with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 U.S.C. § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 13 is rejected under 35 U.S.C. § 102(b) as being anticipated by Moses et al. (US 5,612,943 A).

Moses et al. teaches a data carrier (i.e., compact disc; see the Abstract, for example) including stored thereon transformed data (i.e., a composite signal formed by combining an analog audio signal and a digital data signal). While the transformed data of Moses et al. is not generated by a method identical to that stipulated in the claimed invention, this transformed data is not functional in nature, in that it does not impart specific functionality on a general purpose processing device, and does not form a functional relationship with the data carrier. Data that does not impart such functionality upon the substrate that conveys it is not generally given patentable weight in distinguishing over the prior art (see *In re Gulack* 703 F2d 1381, 217 USPQ 401 (Fed. Cir. 1983)). Because the function of the data carrier is to store the transformed data, and because the data does not change or modify this functionality in any fashion, the transformed data is not given any patentable weights, and Moses et al. anticipates the claimed invention.

10. Claims 1, 3, 5, 7 and 10-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hopper (US 3,406,344 A).

With respect to claim 1, Hopper teaches a method of processing a serial data signal to generate a corresponding transformed signal (i.e., modulate speech signals to convey data

signals; see lines 1-4 in the Abstract), the method including the steps of providing one or more signature sequences (i.e., the auxiliary signals; column 3, lines 26-31); analyzing the serial data signal to determine therein one or more signal sequences for which hold that combining such one or more signal sequences with said one or more signature sequences does not result in generation of illegal states (column 4, lines 45-57; detecting speech bursts to ensure that there is sufficient energy to serve as a carrier for the auxiliary data); and combining one or more of the determined signal sequences of the serial data signal with said one or more signature sequences so as to transform the serial data signal into the transformed signal (column 3, lines 44-70).

In addition, Hopper further teaches that the serial data signal is arranged such that its series of symbols have substantially similar significance (column 2, lines 2-5), as further required by claim 3; that a plurality of signature sequences is employed (i.e., redundancy; column 2, lines 31-35), as set forth in claim 5; that the one or more signature sequences are each two or more symbols long (i.e., made up of code words; column 6, lines 33-34), as defined by claim 7; that the method embeds a watermark in the serial data (i.e., identification information; column 2, lines 50-51), as required by claim 10; an apparatus for implementing the method (as shown generally in Figure 1), as stipulated by claim 11; and transformed data generated using the method (column 5, lines 19-20), as defined by claim 12.

Claim Rejections - 35 U.S.C. § 103

11. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hopper as applied to claims 1, 3, 5, 7 and 10-12 above, and further in view of Magrath et al. (IEEE article entitled "Encoding Hidden Data Channels in Sigma Delta Bitstreams").

As pointed out more fully above, Hopper meets a number of the limitations of the claimed invention, an further teaches that the sequences are directly combinable, the combining involving addition and/or subtraction and/or exclusive-OR (column 3, lines 50-52 and 30 in Figure 2), as further required by claim 2 and further teaches that the combination is performed directly on the serial data without transforming to another signal format (column 2, lines 45-70), as further set forth in claim 9. However, Hopper fails to expressly teach that the data signal is a 1-bit binary signal, as variously required by these claims.

However, Magrath et al. teaches combining signatures with a 1-bit binary data signal (lines 7-8 in the Introduction on page 385), and further teaches that such signals can represent audio information (line 5 in the Introduction on page 385). Because the use of binary/digital signals to represent audio information has become well-known and exceedingly common, it would have been obvious to one of ordinary skill in the art to apply the encoding of Hopper to such 1-bit binary audio signals.

13. Claims 4, 6, 8 and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hopper as applied to claims 1, 3, 5, 7 and 10-12 above, and further in view of Tucker et al. (US 2003/0028381 A1).

While Hopper meets a number of the limitations of the claimed invention, as pointed out more fully above, and further teaches an apparatus for performing the method (shown generally in Figure 1), as further required by claim 16, Hopper fails to specifically teach that the signature sequences are used to reversibly transform the transformed signal to obtain a copy of the data

signal, as variously required by claims 4 and 15; dynamically switching between signature sequences, as set forth in claim 6; using a perceptual model to determine the illegal states, as defined in claim 8 or the use of a computer program to implement method on a computing device, as required by claims 14 and 17.

Tucker et al. teaches using the signature sequences to reversibly transform the transformed signal to obtain the data signal (paragraph [0076]), as required by claims 4 and 15; switches between signature sequences (paragraph [0067]), as required by claim 6; and uses a perceptual model to determine if combining the sequences would result in an illegal state (paragraph [0053]), as required by claim 8. Because Tucker et al. teaches an efficient technique for recovering the data signal and provides for more robust encoding, it would have been obvious to one of ordinary skill in the art combine these features with the coding of Hopper. Furthermore, Tucker et al. also teaches computer software for implementing the method (paragraph [0031]). Because such signal processing is now commonly implemented using programmable computing devices, it would have been obvious to one of ordinary skill in the art to implement the method of Hopper with such computer software.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aprea et al. and Bruekers et al. were cited in the International Search Report and are therefore made of record. The other cited references variously teach combining signature sequences with signals.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Johns whose telephone number is (571) 272-7391. The examiner is normally available Monday through Friday, at least during the hours of 9:00 am to 3:00 pm Eastern Time. The examiner may also be contacted by e-mail using the address:

andrew.johns@uspto.gov. (Applicant is reminded of the Office policy regarding e-mail communications. See M.P.E.P. § 502.03)

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached at (571) 272-7453. The fax phone number for this art unit is (571) 273-8300. In order to ensure prompt delivery to the examiner, all unofficial communications should be clearly labeled as "Draft" or "Unofficial."

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center Receptionist whose telephone number is (571) 272-2600.

A. Johns
1 December 2009

/Andrew W. Johns/
Primary Examiner, Art Unit 2624